

A PROPOSED METHOD OF RETRODUODENAL  
CHOLEDOCHOTOMY FOR THE REMOVAL OF  
IMPACTED CALCULI IN THE RETRODUODE-  
NAL AND PAPILLARY PORTIONS OF THE  
COMMON BILE-DUCT.

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TRANSDUODENAL choledochotomy, first suggested by McBurney, of New York, is an operation by which, it is claimed, the removal of impacted stones in the retroduodenal and papillary portions of the common bile-duct may be readily and satisfactorily accomplished. Yet it is a procedure attended with sufficiently grave risks to cause us to resort to its use only when all other methods for removing the calculi have failed. Besides the difficulty that may be experienced in finding the duodenal papilla, the opening of the duodenum is always a serious procedure. The danger lies not so much in a primary peritoneal infection as in the possible insufficiency of the closing sutures. A small duodenal fistula tends to become larger; spontaneous closure is most unlikely, and death from inanition would be the natural consequence. The writer knows of one such case in which, after a transduodenal choledochotomy, a leak in the duodenum occurred, and death from inanition resulted. Such insufficiency of the suture line cannot be attributed to an improperly placed suture. For it must be remembered that in these cases of long-standing, impacted calculi in the gall-bladder and ducts, the peritoneal covering of these parts has been repeatedly inflamed. Numerous adhesions have formed, and the peritoneum has lost to a considerable degree its quality of adhesiveness. This alteration in the peritoneum accounts for the failure of a very carefully placed suture to effect a perfect closure of the duodenum.

To obviate the necessity of opening the duodenum the writer has thought of a retroduodenal route for access to the retroduodenal and papillary portions of the common bile-duct. Such a method of approach necessarily demands a mobilization of the descending portion of the duodenum sufficiently to permit of its rotation to the left around a longitudinal axis passing through its inner border. The feasibility of such mobilization and reflection of this portion of the duodenum in the living subject has been demonstrated by Kocher, who has employed it in five cases for the purposes of gastroduodenostomy (*Centralblatt für Chirurgie*, 1903, No. 2).

The writer has had no opportunity to test the value of the retroduodenal method of attacking the retroduodenal and papillary portions of the common bile-duct in the living subject. By the kindness of Dr. Gallaudet, of the College of Physicians and Surgeons, Columbia University, he was enabled to test its practicability upon the cadaver. It was especially noted that the posterior parietal peritoneum in this region and the descending portions of the duodenum are very loosely attached to the abdominal wall, and that their separation from the posterior parietes and the reflection inward of the duodenum are very easily accomplished. In a subject with the arteries well injected, no vessels of any importance were encountered. The pancreaticoduodenal arteries lie about one-quarter of an inch anterior to the duct, and run in a course parallel to it. A small vein was noticed to cross the duct just before its entrance into the duodenum. Exposure of the entire retroduodenal and papillary portions of the duct was excellent, and manipulations with it were easily carried out.

The steps in the operation of retroduodenal choledochotomy are as follows:

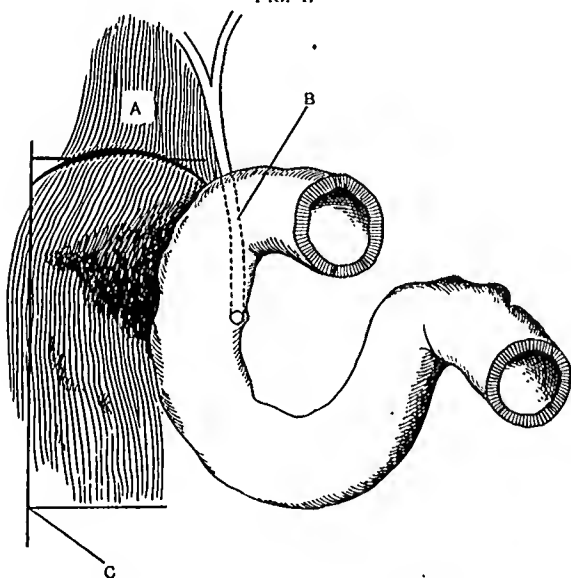
A small, round, hard cushion should be placed under the lower dorsal region of the patient. This throws the posterior abdominal parietes forward and renders more accessible the descending duodenum, common bile and cystic ducts.

1. Abdominal incision through the right rectus muscle, extending from the costal arch to the umbilicus.

2. Free exposure of the descending portion of the duodenum; all surrounding adhesions are freely separated, or, when vascular, divided between two ligatures. The liver is drawn upward by a broad retractor, the stomach pushed over to the left, and the transverse colon downward by gauze compresses and held away by the assistant.

3. Mobilization of the descending duodenum. Three or four centimetres external to the right border of the duodenum,

FIG. 1.



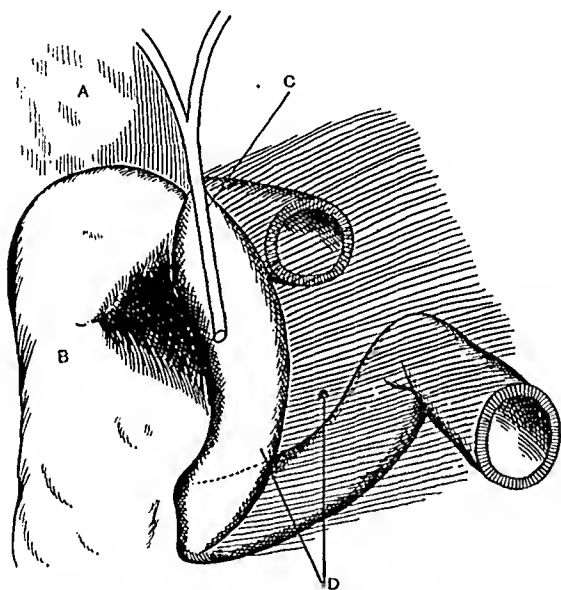
A, Hepatorenal ligament; B, retroduodenal portion of choledochus brought anteriorly by reflection of duodenum to left; C, line of incision for reflection to the left of peritoneum and duodenum.

the posterior parietal peritoneum is incised (Fig. 1) in a longitudinal direction from the flexure of the duodenum above to the transverse mesocolon below.

With the finger, the internal or left portion of the divided peritoneum is elevated from the parietes up to the right duo-

denal border; the finger then passes behind the duodenum, gently separating it up to its inner border, from the vertebræ, inferior cava, and aorta. The duodenum is now only loosely fixed at its flexure above, at the transverse mesocolon below, and along its inner concave margin, and is easily rotated to the left around a longitudinal axis passing through its inner

FIG. 2.



A, hepatorenal ligament; B, right kidney; C, retroduodenal portion of choledochus brought anteriorly by reflection of duodenum to left; D, duodenum and peritoneum reflected to the left.

margin. This rotation brings its posterior surface and the retroduodenal and papillary portions of the common duct anteriorly, and affords an excellent exposure of these parts (Fig. 2).

(The relation of the duct to the neighboring parts is as follows. The duodenal branch of the pancreaticoduodenal

artery lies anteriorly to the duct, and separated from it by about one-fourth of an inch. The accompanying vein lies just behind the duct; in some instances a branch of the vein crosses it just before its entrance into the duodenum. The superior mesenteric branch of the portal vein is considerably internal to the duct, and the vena cava posteriorly to it.)

The duct is easily recognized; it can be grasped between the fingers, incised, and calculi impacted in it removed.

4. *Toilet*.—The site of incision into the duct should be covered by a narrow wick of gauze, and the descending duodenum allowed to fall back into its original position. If it is necessary to drain the common bile and hepatic ducts, the common duct is incised in its free portion in the gastrohepatic ligament, and a drainage tube inserted into this opening. The incision into the retroduodenal portion of the duct can be easily sutured, though this should not be necessary.

Upon the cadaver, the operation appears to be an eminently satisfactory method of access to the retroduodenal and papillary portions of the choledochus. The writer begs of those who think well enough of it to try it and report their results.